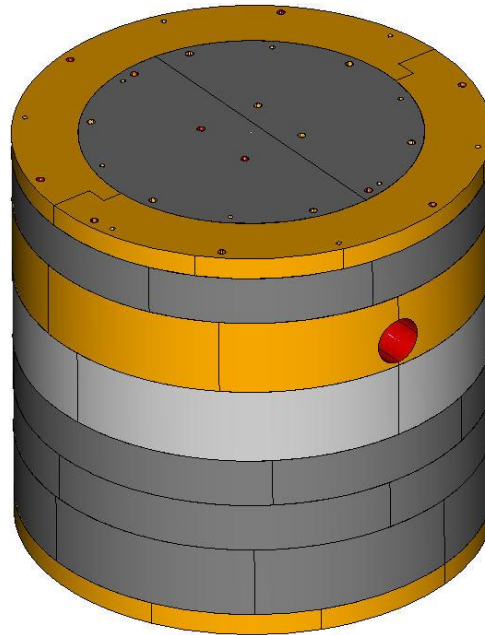
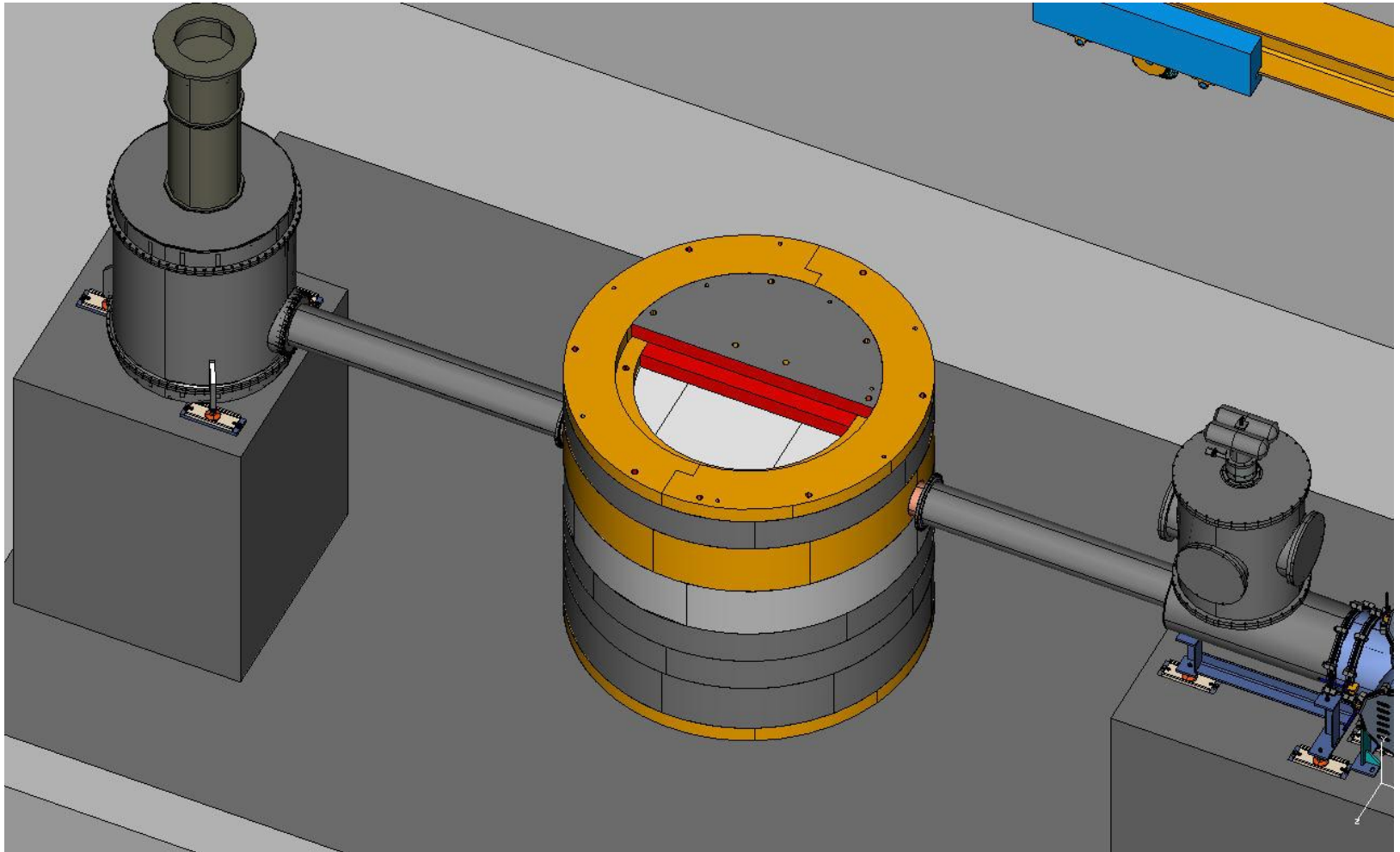


Super CDMS Lead Shield

version 3 Design

(with installation procedures)





The overall view of the SCDMS lead shield and its application
(removed one part of the top inner cover for viewing purpose)

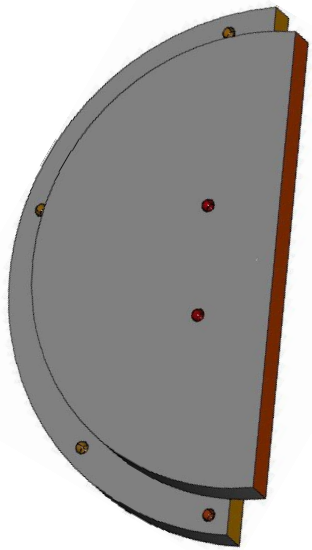
Major Design Criteria & Specifications:

- 1 The overall lead shield configurations & dimensions are based on the SCDMS applications.
- 2 The overall weight of the lead shield is about 52,000 lbs.
The overall height is 65.50 inches, inside net height is 51.50 inches.
The outside diameter is 71", and the inside diameter is 54".
- 3 The SCDMS lead shield consists of 10 rings, each ring has two casting parts.
 - Vertical rings with 7.25" dia through hole (2).
 - Vertical rings with 11.25" overall height (3).
 - Lower vertical adapter ring (1).
 - Top & bottom outer cover shield (2).
 - Top & bottom Inner cover shield (2).

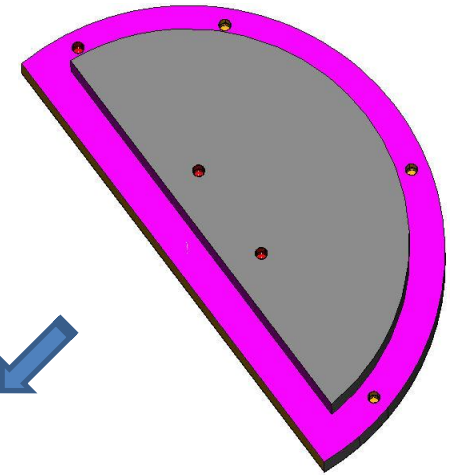
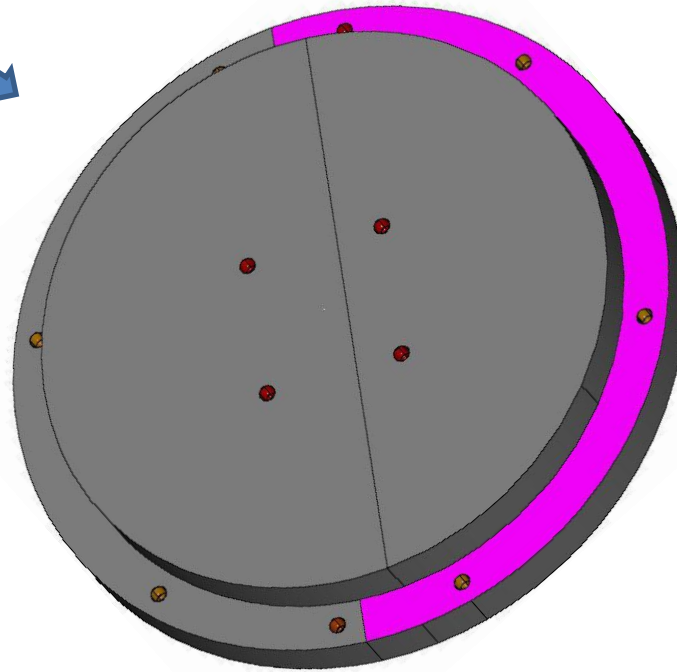
4. The configuration, weight and dimension of each casting part is decided by:
 - The specifications from the project experiment.
 - The transport box specifications (See figure 7.7, section 7.4.4, Snolab User's Handbook, rev 2).
 - The specifications of the existing and future handling equipments at Snolab.
 - The cost and availability of the manufacture.
 - The unique mechanical properties of the shield material – Lead.
 - To maximize the shielding and minimize the leaking.

The SCDMS lead shield installation procedures (steps):

(From page 5 to page 13)



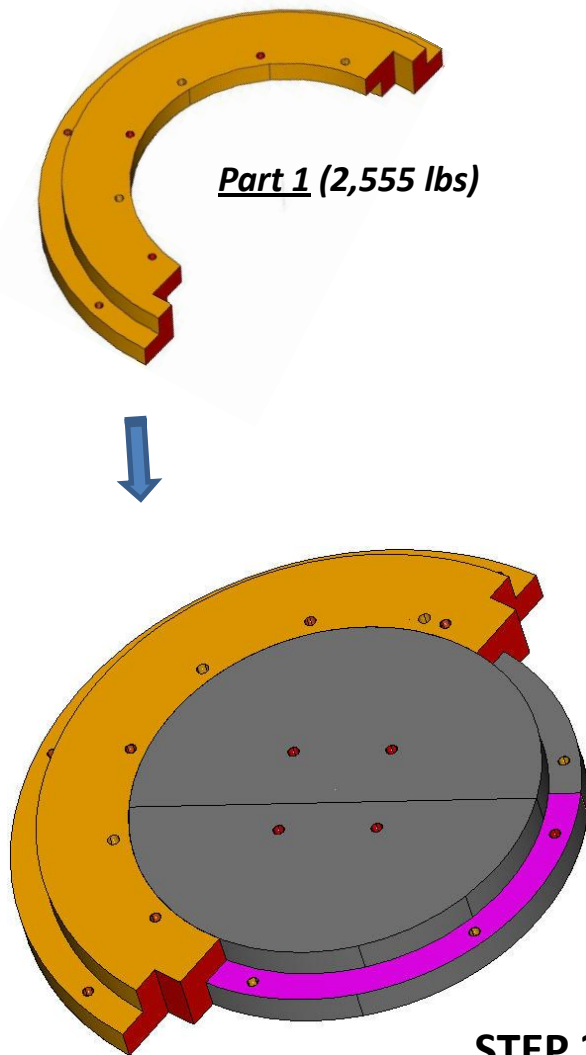
Part2 (2,561 lbs)



Part1 (2,596 lbs)

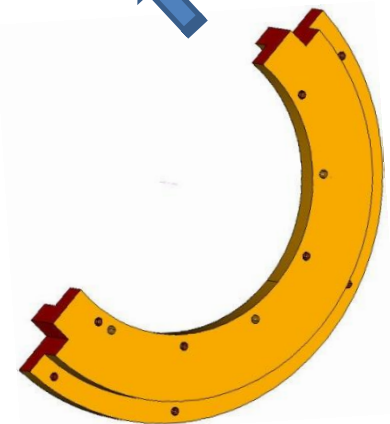
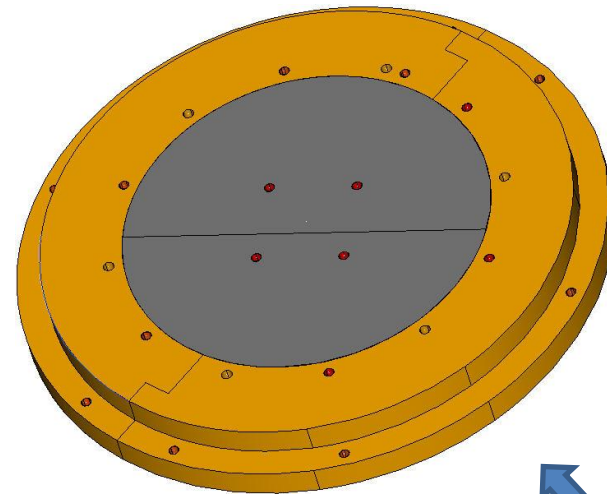
STEP 1:

*Install the bottom inner shield
(2 parts), see slide 16 for general
dimension.*

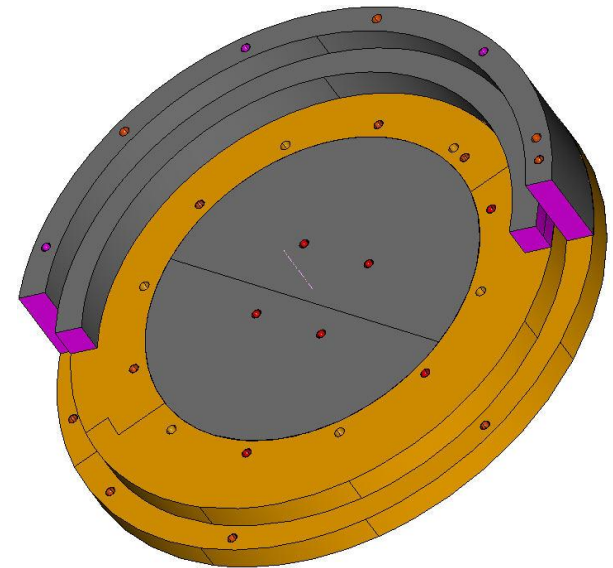
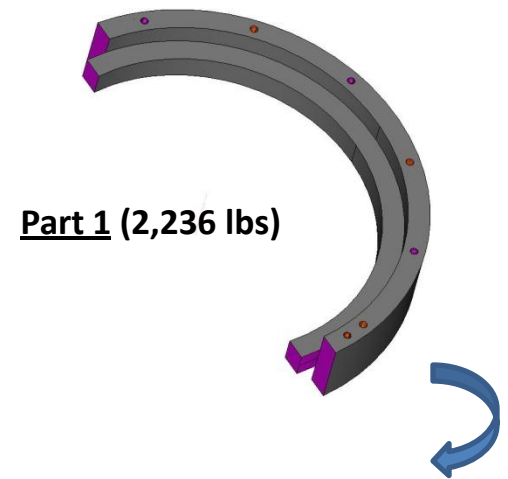
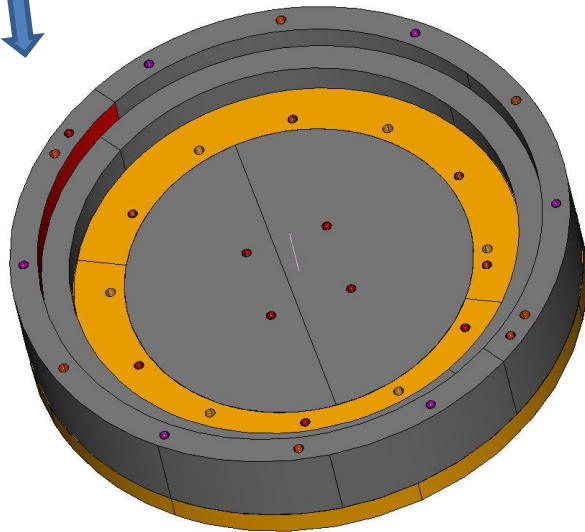
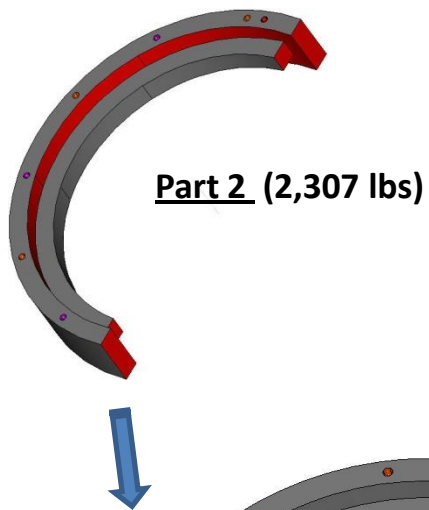


STEP 2:

*Install the bottom outer shield
(1 ring, 2 parts).
See slide 15 for general dimension.*



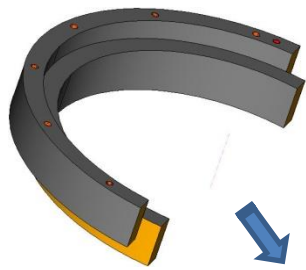
Part 2 (2,553 lbs)



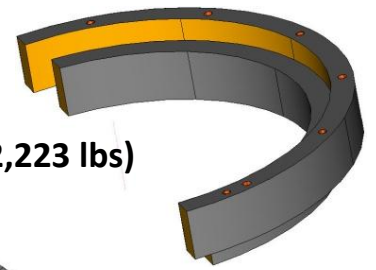
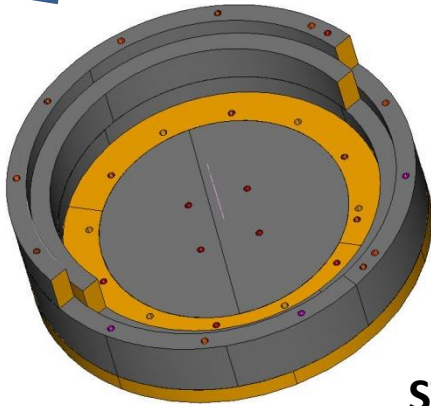
STEP 3:

Install the bottom vertical adapter shield (1 ring, 2 parts)

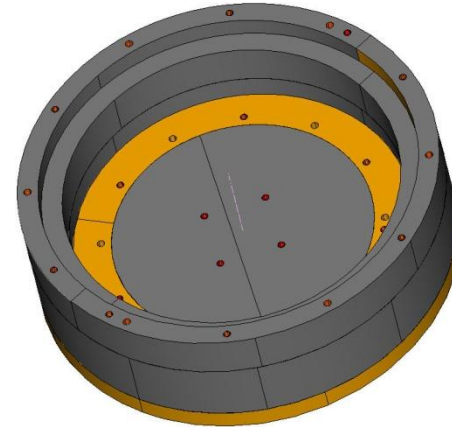
See slide 19 for general dimension.



Part 1 (2,223 lbs)

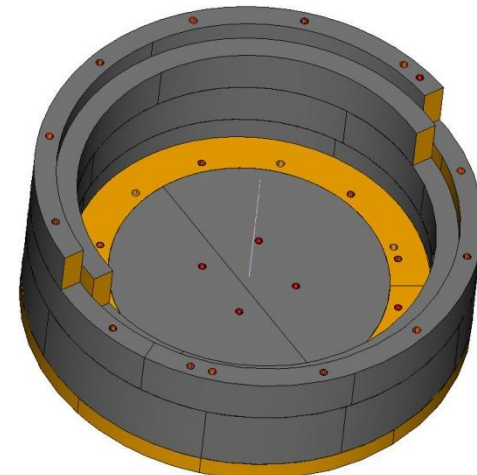
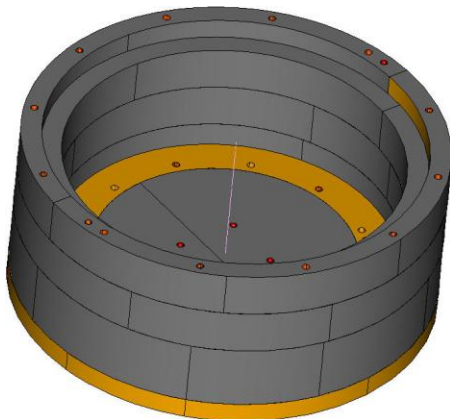


Part 2 (2,223 lbs)



STEP 4:

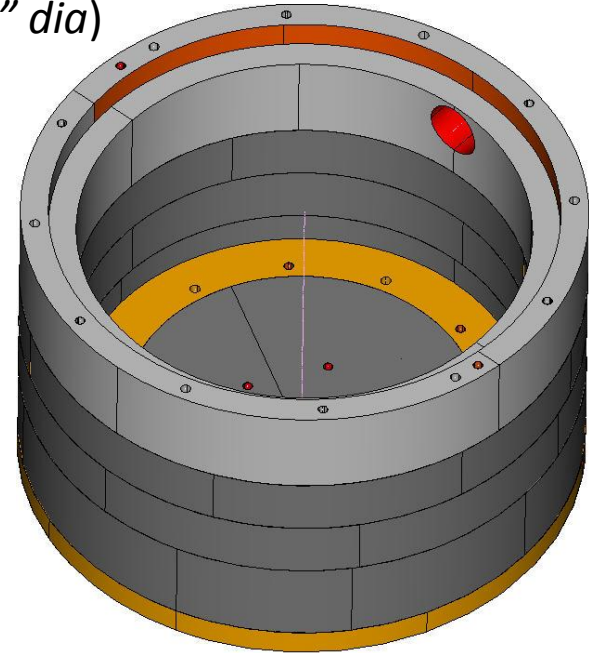
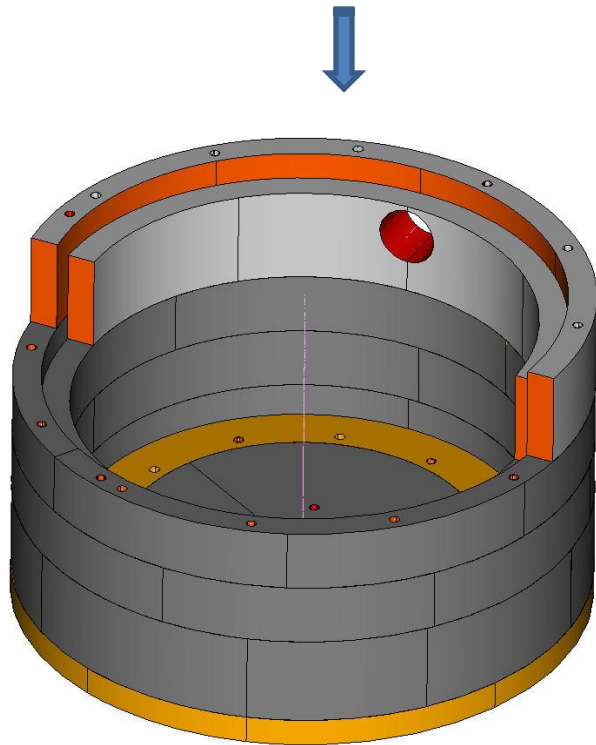
Install the lower vertical shield (2 rings, 4 parts). See slide 17 for general dimension.



Part 1 (3,319 lbs)

STEP 5:

*Install lower vertical shield
with access hole (7.25" dia)
(1 ring, 2 parts)*



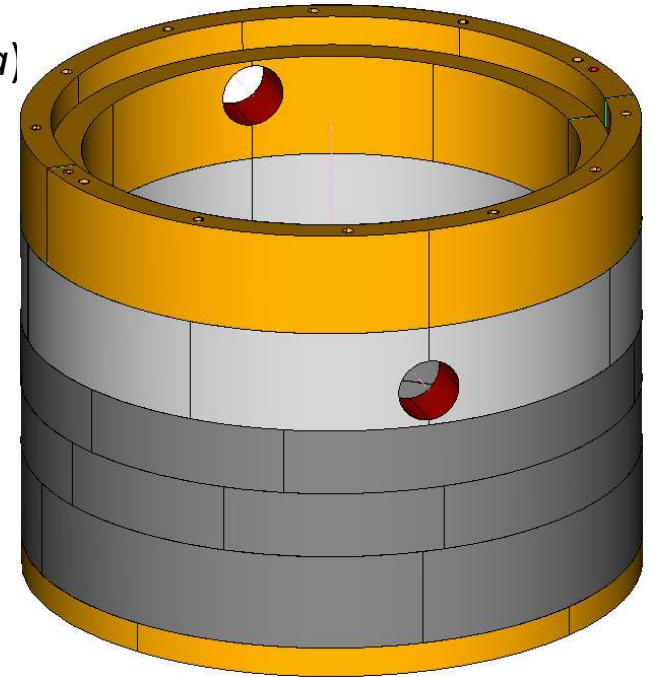
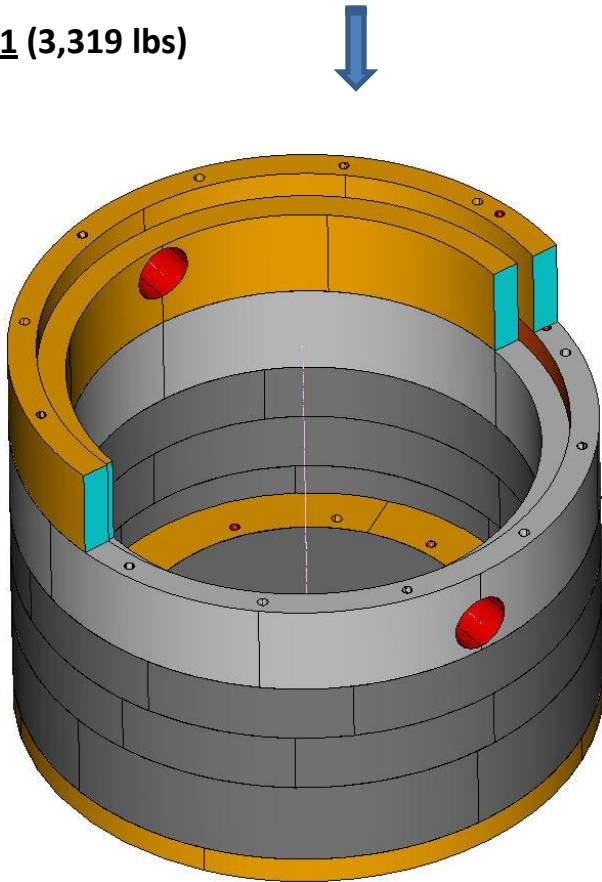
Part 2 (3,443 lbs)

See slide 18 for general dimension.

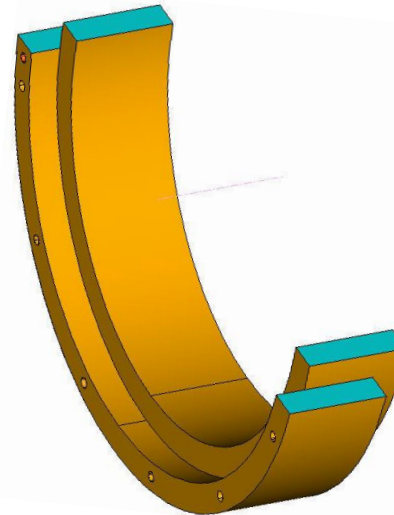
STEP 6:

*Install top vertical shield
with access hole (7.25" dia)
(1 ring, 2 parts).*

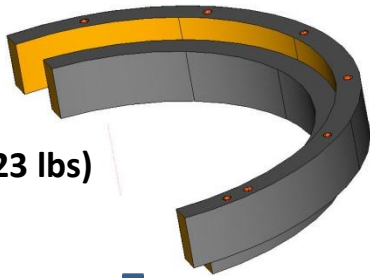
Part 1 (3,319 lbs)



Part 2 (3,443 lbs)



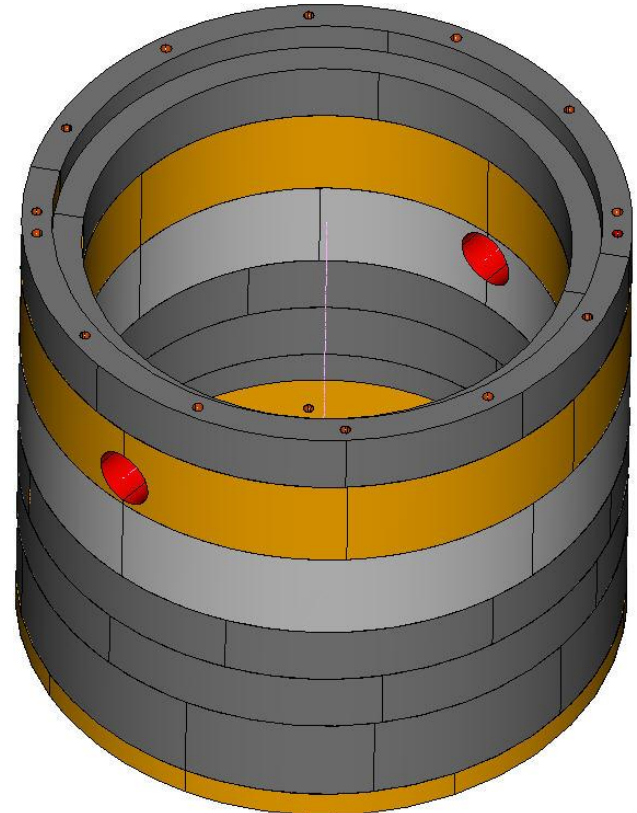
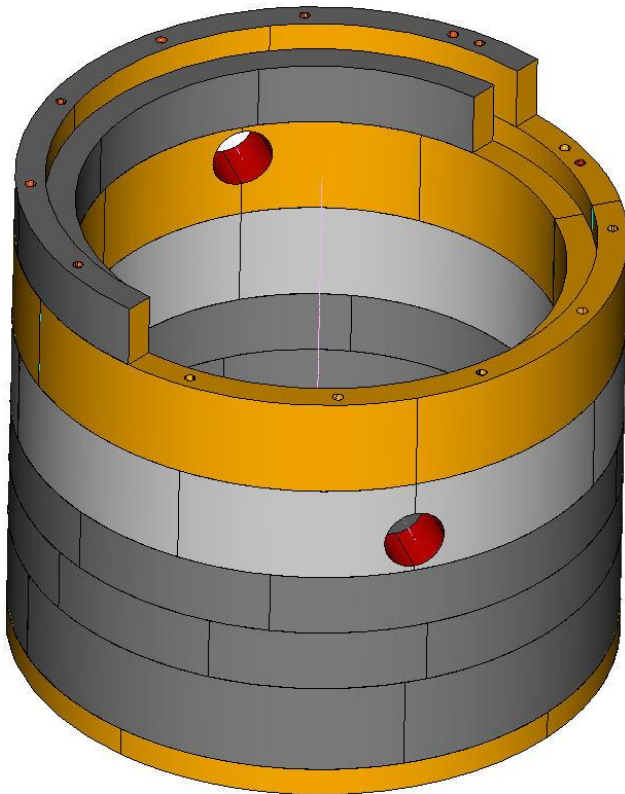
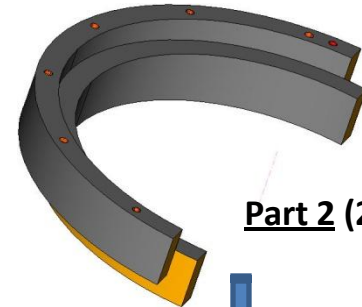
Part 1 (2,223 lbs)

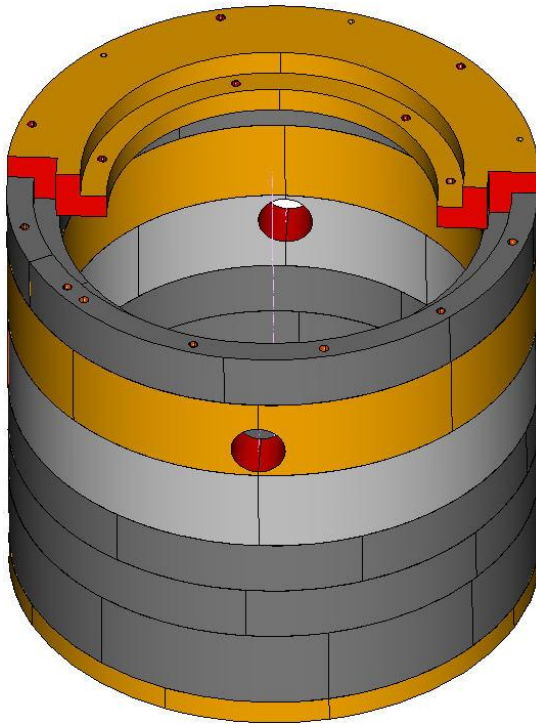
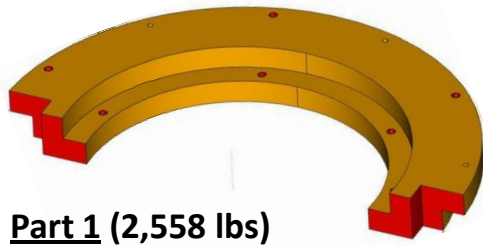


STEP 7:

Install the top vertical shield (1 ring, 2 parts).

Part 2 (2,223 lbs)



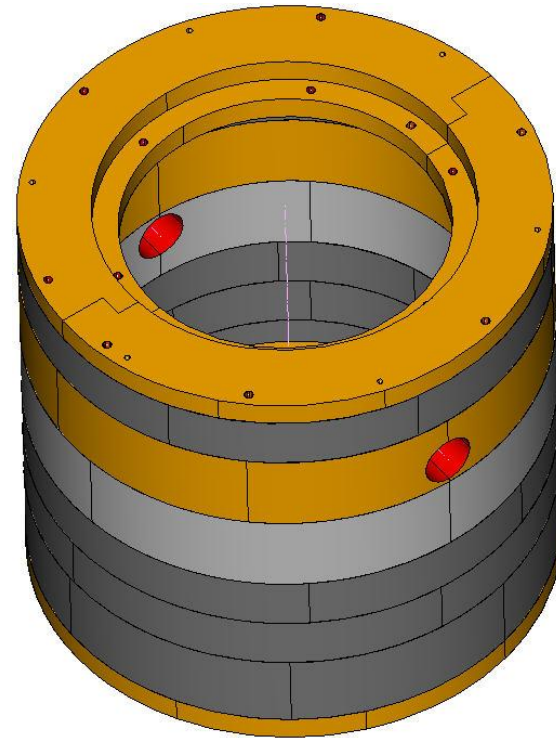
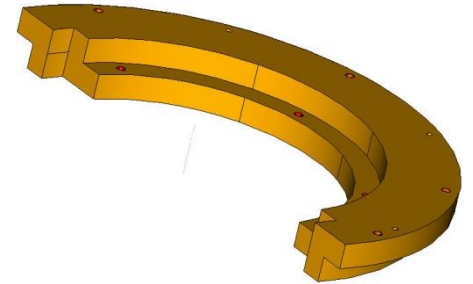


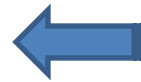
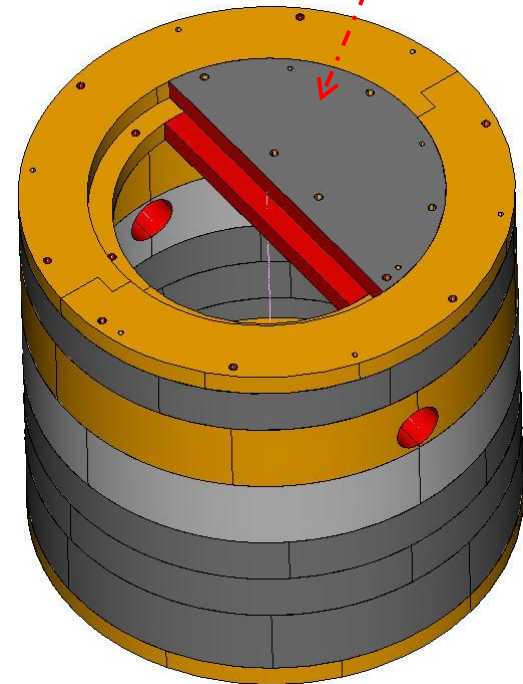
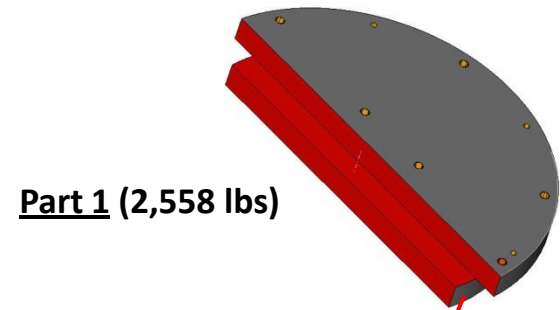
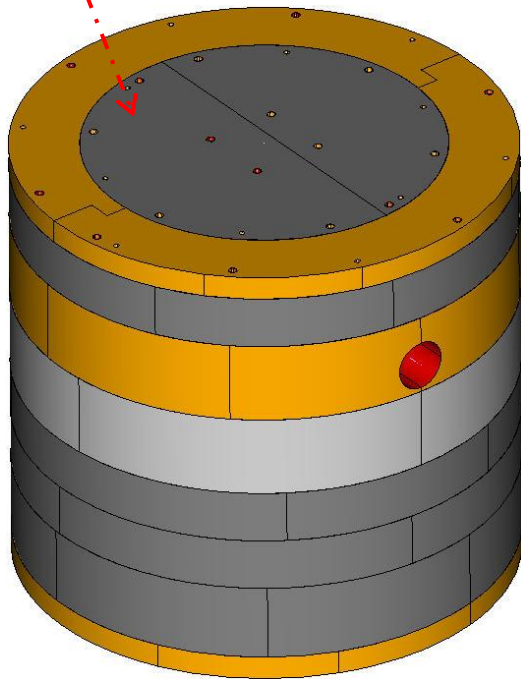
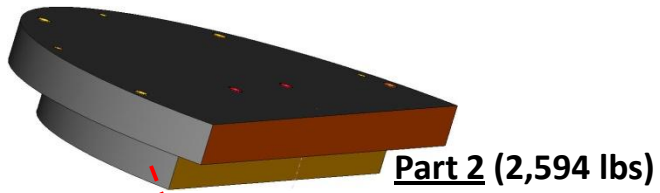
STEP 8:

*Install the top outer
cover shield (1 ring, 2
parts).*

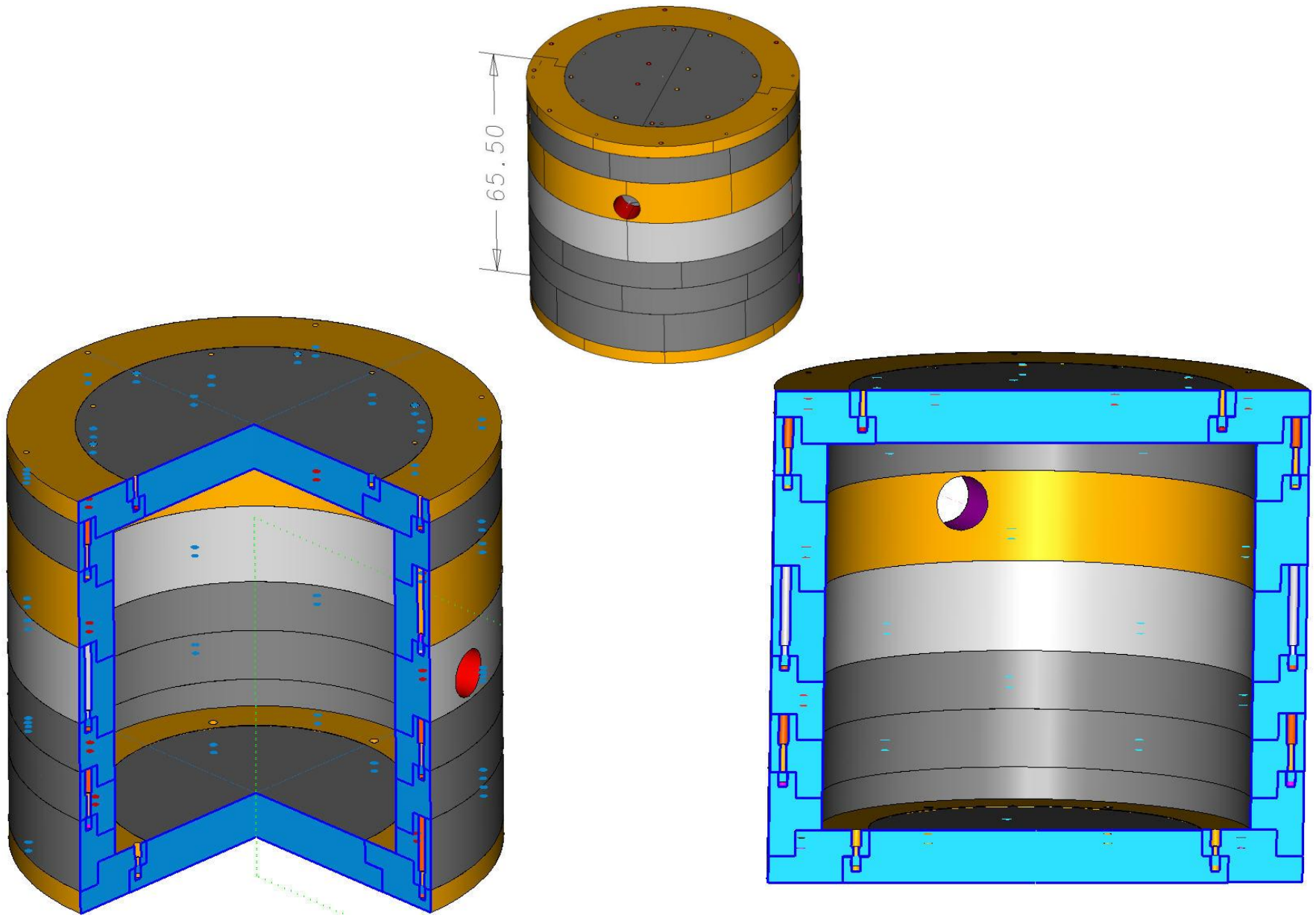


Part 2 (2,556 lbs)



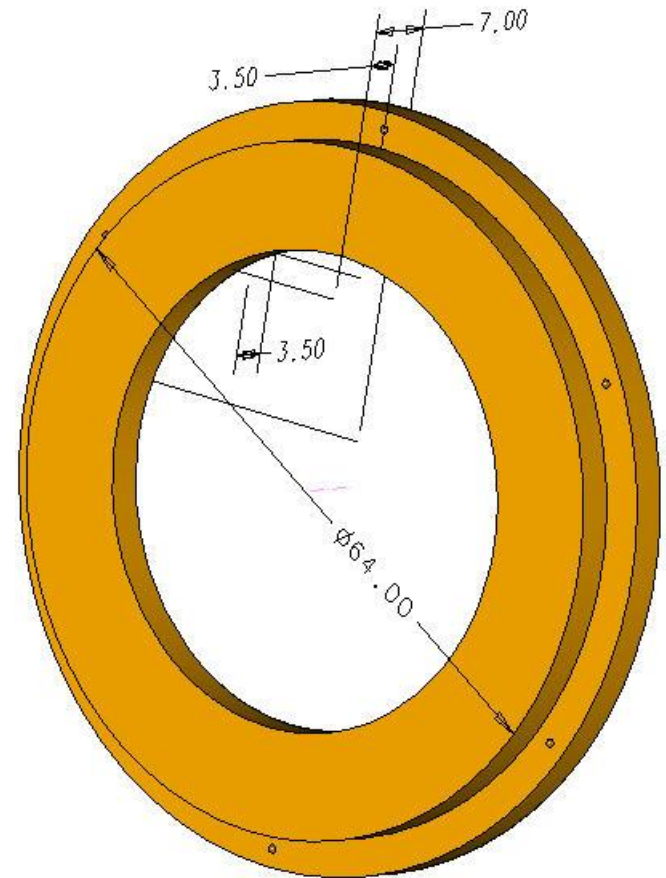
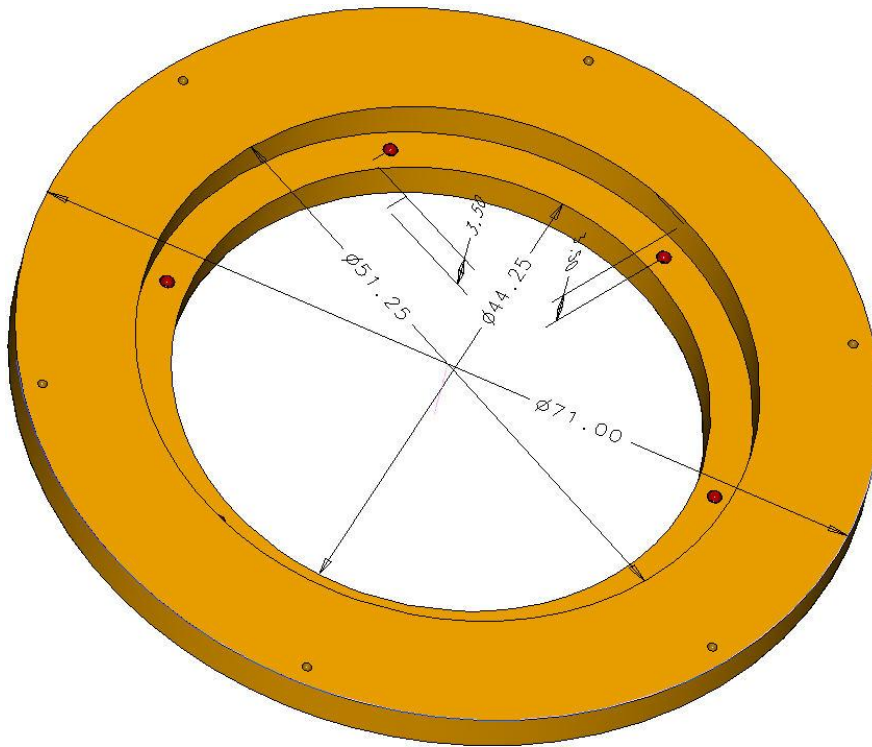


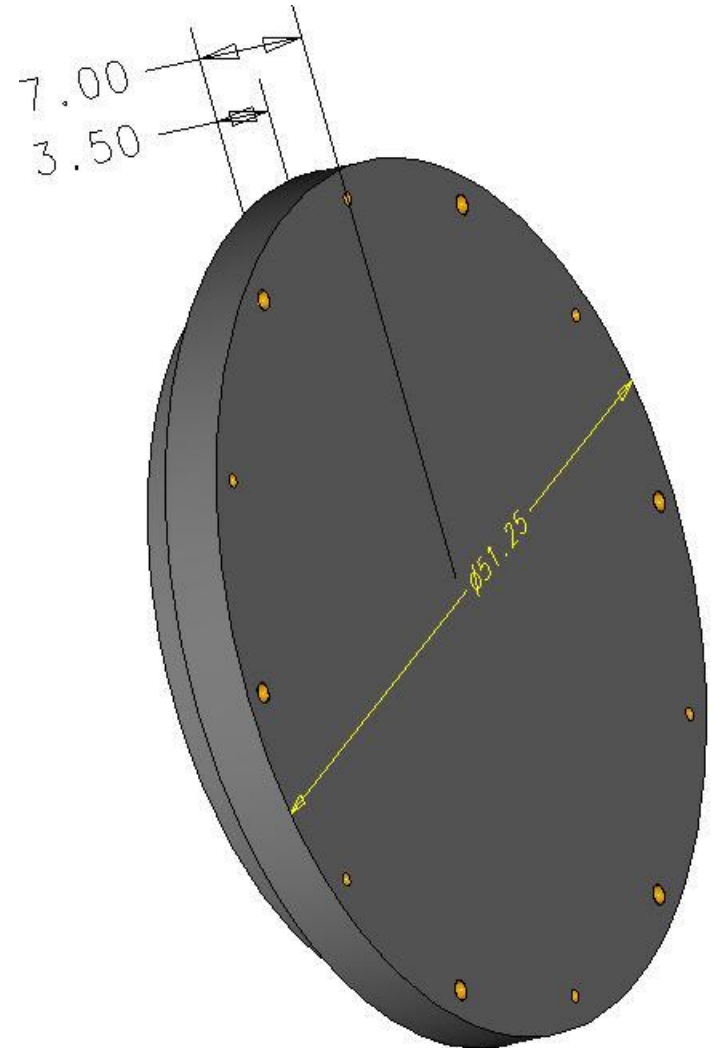
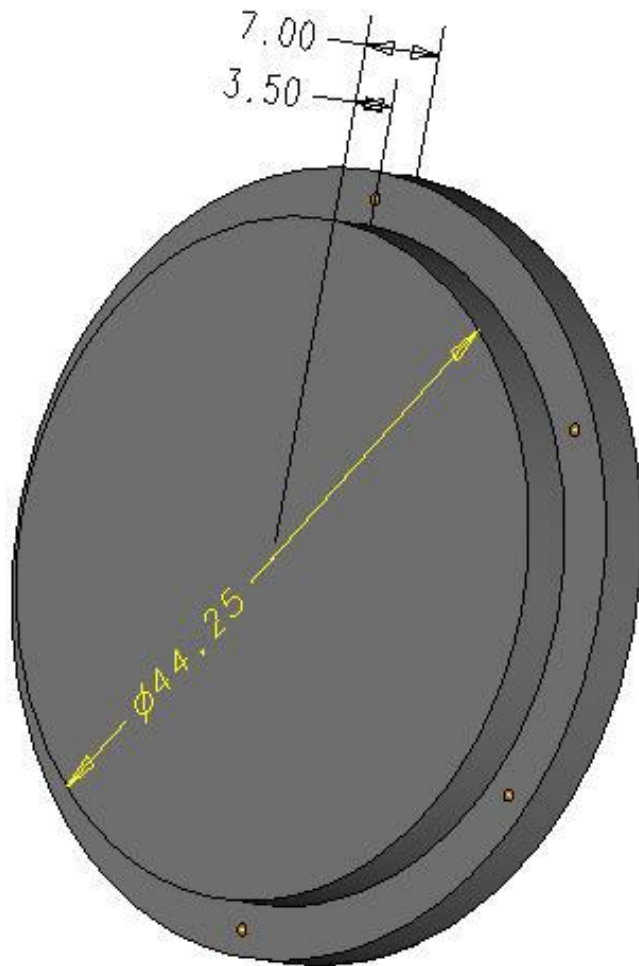
STEP 9:
*Install the top inner
cover shield (2 parts).*



Cross section view of the the assembled SCDMS lead shield

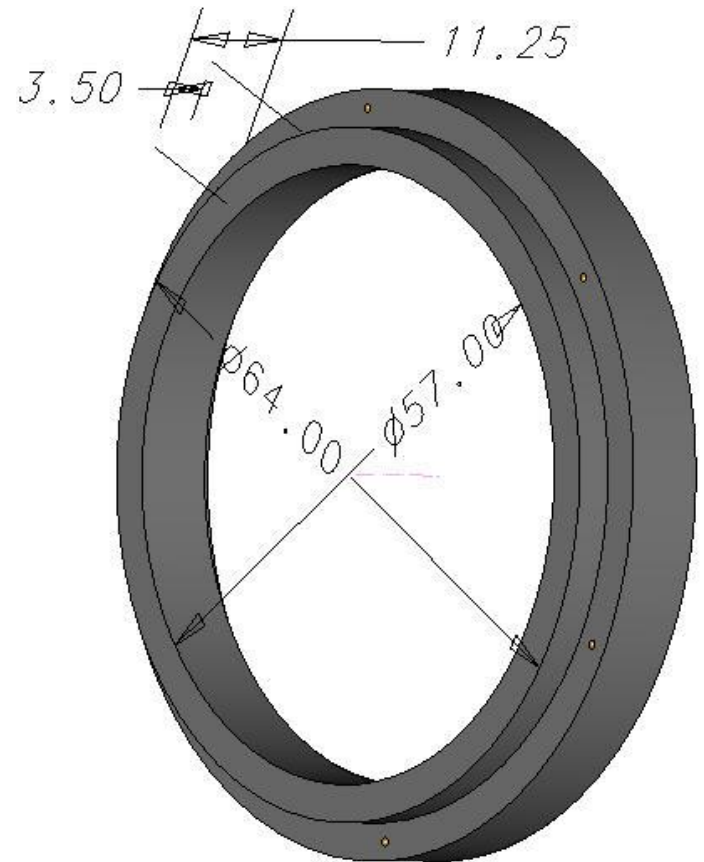
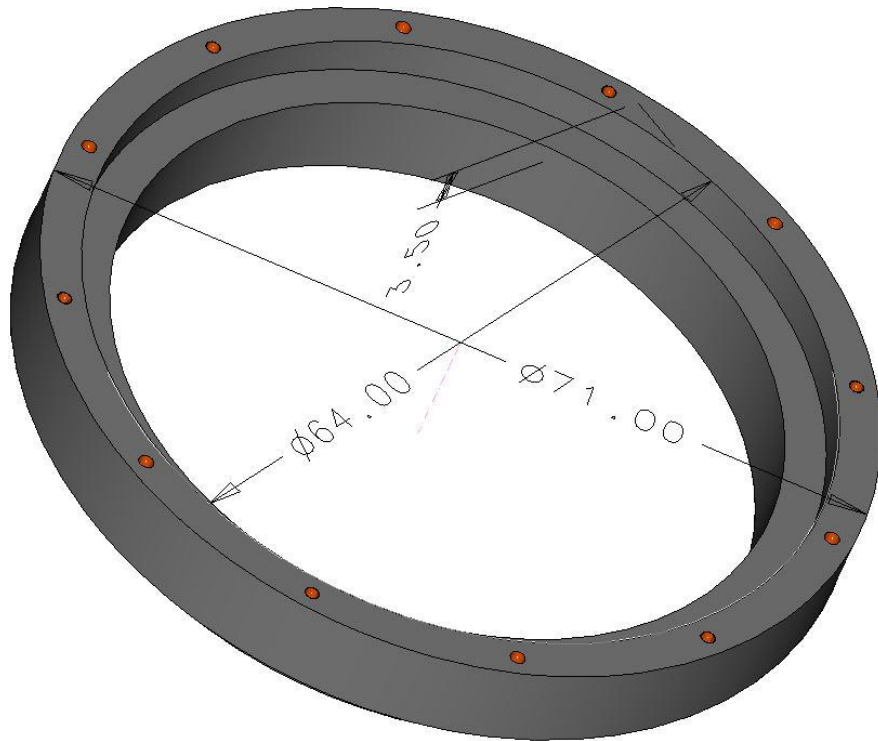
Outer ring-top/bottom
-pb-shield

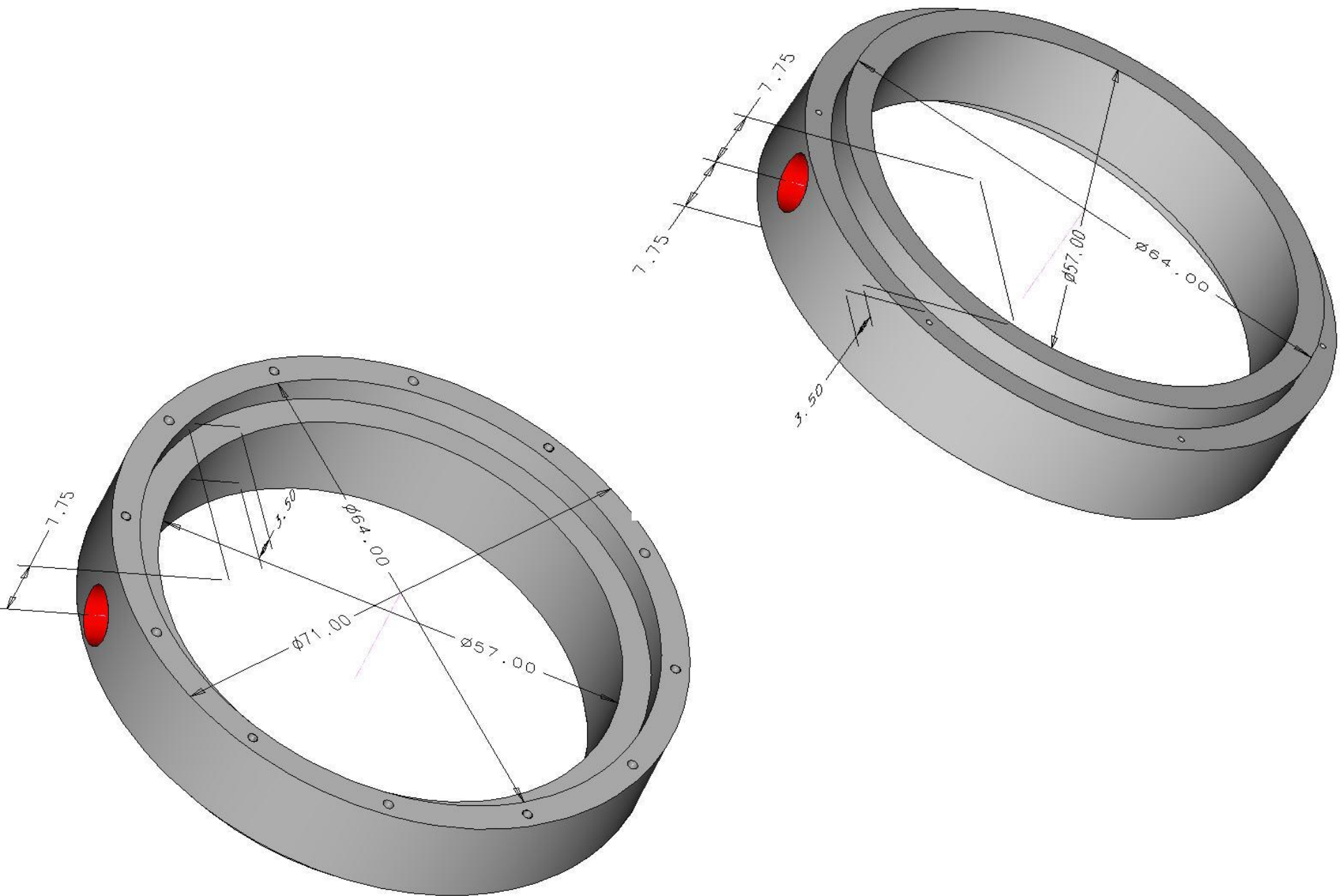




Inner plate – top/bottom
Cover- pb-shield

Ring-vertical-11.25"HT
-pb-shield





Ring-lower-adapter-
pb-shield

